MUNICIPAL
WASTEWATER-LAND APPLICATION PERMIT
LA-000154-02
Mountain Home Air Force Base

MOUNTAIN HOME AIR FORCE BASE, 1100 Liberator Street, Mountain Home AFB, ID 83648-5229, IS HEREBY AUTHORIZED TO CONSTRUCT, INSTALL AND OPERATE A WASTEWATER-LAND APPLICATION TREATMENT SYSTEM IN ACCORDANCE WITH THE WASTEWATER-LAND APPLICATION RULES (IDAPA 58.01.17), THE WATER QUALITY STANDARDS AND WASTEWATER TREATMENT REQUIREMENTS (IDAPA 58.01.02), THE GROUND WATER QUALITY RULE (IDAPA 58.01.11) AND THE ACCOMPANYING PERMIT, APPENDICES, AND REFERENCE DOCUMENTS. THIS PERMIT IS EFFECTIVE FROM THE DATE OF SIGNATURE AND EXPIRES ON **June 20, 2008.**

Katherine B. Kelly, Administrator
Boise Regional Office

Date: 6/19/03

DEPARTMENT OF ENVIRONMENTAL QUALITY
1445 N. Orchard, Boise, Idaho 83706-2239
(208) 373-0550

POSTING ON SITE RECOMMENDED

B. Permit Contents, Appendices, and Reference Documents

Reference Documents Incorporated into the Permit

1. Operation and Maintenance Manual (Plan of Operation)
2. Biosolids Management Plan
3. Groundwater Monitoring Plan

The reference documents shall be updated as necessary to reflect current operations.

The Sections, Appendices, and References listed on this page are all elements of Wastewater-Land Application Permit LA-000154-02 and are enforceable as such. This permit does not relieve the Mountain Home Air Force Base, hereafter referred to as the permittee, from responsibility for compliance with other applicable federal, state or local laws, rules, standards or ordinances.

C. Abbreviations, Definitions

Ac-in	Acre-inch. The volume of water or wastewater to cover 1 acre of land to a depth of 1 inch. Equal to 27,154 gallons.
BMP or BMPs	Best Management Practices
BOD_5	5-day Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
DEQ or the Department	Idaho Department of Environmental Quality
Director	Director of the Idaho Department of Environmental Quality, or the Director's Designee, i.e. Regional Administrator
DTPA	Diethylenetriaminepentaacetate – a chelating agent that forms stable complexes with a variety of metal ions
ET	Evapotranspiration – Loss of water from the soil and vegetation by evaporation and plant uptake (transpiration)
GS	Growing Season – typically April 1 through October 31 (214 days)
GW	Ground Water
GWQR	IDAPA 58.01.11, *Ground Water Quality Rule*
Handbook or Guidelines	*Handbook for Land Application of Municipal and Industrial Wastewater*, DEQ, April 1996.
HLR_{gs}	Growing Season Hydraulic Loading Rate. Includes any combination of wastewater and supplemental irrigation water applied to land application hydraulic management units during the growing season. The HLR_{gs} limit is specified in Section F. *Permit Limits and Conditions.*
HLR_{ngs}	Non-Growing Season Hydraulic Loading Rate. Includes any combination of wastewater and supplemental irrigation water applied to each hydraulic management unit during the non-growing season. The HLR_{ngs} limit is specified in Section F. *Permit Limits and Conditions*.
HMU	Hydraulic Management Unit (Serial Number designation is MU)
IWR	Irrigation Water Requirement – Any combination of wastewater and supplemental irrigation water applied at rates commensurate to the water requirements of the crop, and calculated monthly during the growing season (GS). Calculation methodology for the IWR can be found at the following website: http://www.kimberly.uidaho.edu/water/appndxet/index.shtml. The equation used to calculate the IWR at this website is: $IWR = (CU - P_e) / E_i$ where: CU is the monthly consumptive use for a given crop in a given climatic area. CU is synonymous with crop evapotranspiration; P_e is the effective precipitation. CU minus Pe is synonymous with the net irrigation requirement (IR); and E_i is the irrigation system efficiency. To obtain the irrigation water requirement (IWR), divide the IR by the irrigation system efficiency.
IDAPA	Idaho Administrative Procedures Act.
LG	Lagoon
lb/ac-day	Pounds (of constituent) per acre per day
lb/ac-year	Pounds (of constituent) per acre per year
MG	Million Gallons (1 MG is equal to 36.827 acre-inches)
MGA	Million Gallons Annually (per WLAP Reporting Year)

C. Abbreviations, Definitions

NGS	Non-Growing Season – typically November 1 through March 31 (151 days)
NTU	Nephelometric Turbidy Units
NVDS	Non-Volatile Dissolved Solids (equal to Total Dissolved Solids minus Volatile Dissolved Solids)
O&M Manual	Operation and Maintenance Manual, also referred to as the Plan of Operation
RI	Rapid Infiltration
SAR	Sodium Absorption Ratio
SBR	Sequencing Batch Reactor – biological wastewater treatment system operated in a batch mode
SI	Supplemental Irrigation water applied to the land application treatment site.
Soil AWC	Soil Available Water Holding Capacity – the water storage capability of a soil to a depth at which plant roots will utilize (typically 60 inches or root limiting layer)
SMU	Soil Monitoring Unit (Serial Number designation is SU)
SW	Surface Water
TDS	Total Dissolved Solids or Total Filterable Residue
TDIS	Total Dissolved Inorganic Solids - the summation of chemical concentration results in mg/L for the following common ions: calcium, magnesium, potassium, sodium, chloride, sulfate, and 0.6 times alkalinity (alkalinity expressed as calcium carbonate). Nitrate, silica, and fluoride shall be included if present in significant quantities (i.e. greater than 5 mg/L each).
TMDL	Total Maximum Daily Load - the sum of the individual waste-load allocations (WLA's) for point sources, load allocations (LA's) for non-point sources, and natural background levels entering a surface water body. The TMDL is or shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality. See IDAPA 58.01.02 *Water Quality Standards and Wastewater Treatment Requirements*
TSS	Total Suspended Solids
Typical Crop Uptake	Typical Crop Uptake is defined as the median constituent crop uptake from the three (3) most recent years the crop has been grown. Typical Crop Uptake is determined for each hydraulic management unit. For new crops having less than three years of on-site crop uptake data, regional crop yield data and typical nutrient content values, or other values approved by DEQ may be used
USGS	United States Geological Survey
UV	Ultraviolet disinfection
WLAP	Wastewater Land Application Permit (or Program)
WLAP Reporting Year	The reporting year begins with the non-growing season and extends through the growing season of the following year, typically November 1 through October 31. For example, the 2000 Reporting Year was November 1, 1999 through October 31, 2000
WW	Wastewater applied to the land application treatment site

D. Facility Information

Legal Name of Permittee	United States Air Force, Mountain Home Air Force Base (MHAFB)
Type of Wastewater	Domestic Wastewater (approximately 1% of flow from non-domestic sources)
Method of Treatment	Sequencing Batch Reactors and Chlorination. Slow Rate Application in multiple locations and High Rate Application to Rapid Infiltration Basins
Type of Facility	United States Air Force Base
Facility Location	Mountain Home Air Force Base, Idaho
Legal Location	Township 4 South, Range 5 East, Section s 20, 21,22, 27, 28, 29, 32, 33, and 34
County	Elmore
USGS Quad	Crater Rings SE, Crater Rings SW
Soils on Site	Silt loam, loam, fine sandy loam, very fine sandy loam, indurated
Depth to Ground Water	Generally 350 feet to 380 feet below ground level
Beneficial Uses of Ground Water	Agricultural, Industrial, Domestic
Nearest Surface Water	Canyon Creek, 4 miles; Snake River, 4 miles
Beneficial Uses of Surface Water	Agriculture, Industrial, Domestic, Recreation, Aquatic Life
Responsible Official **Mailing Address** **Phone/Fax**	Mr. Nathan E. Rowland Chief, Environmental Flight Mountain Home AFB, Idaho 83648 (208) 828-6351 / (208) 828-2194

E. Compliance Schedule for Required Activities

The Activities in the following table shall be completed on or before the Completion Date unless modified by the Department in writing.

Compliance Activity Number **Completion Date**	Compliance Activity Description
CA-00154-01 **3 months after permit issuance**	Submit a report summarizing steps taken to make operational the chlorination control system. Review and implement, as appropriate, the recommendations outlined in the July 2000 Operations and Regulation Review report. If needed, submit plans and specifications for DEQ review and approval prior to construction activities.
CA-00154-02 **Prior to effluent reuse on Golf Course**	Submit a preliminary engineering report and conceptual design for the Golf Course Irrigation wastewater reuse system for DEQ review and approval. At a minimum, the submittal shall address the following: disinfection strategy, hydraulic balance, proposed irrigation system and use of supplemental irrigation water, proposed hydraulic management units and soil monitoring units, buffer distances, wellhead protection measures and isolation of BPW-8, and effluent storage facilities if proposed.
CA-00154-03 **45 days prior to anticipated construction**	Prior to construction of all wastewater facilities, detailed plans and specifications shall be reviewed and approved by DEQ. Within 30 days of completion of construction, the permittee shall submit as-built plans for review and approval or a letter from an Idaho-registered Professional Engineer certifying that the wastewater facilities were constructed in substantial accordance with the approved plans and specifications. Construction projects may include, but are not limited to: • Spray truck filling station near the wastewater storage lagoon pumping station • Compost Piles Moisture Control area: paved and curbed pad to control seepage and runoff, use of a compost mixing machine, and a fixed sprinkler system • Landfill Dust Suppression sprinkler systems • Reuse wastewater supply line from WWTP to Golf Course • Golf Course Irrigation wastewater reuse system including disinfection system, irrigation system, wastewater storage impoundment, and modifications to BPW-8.
CA-00154-04 **30 days prior to wastewater reuse system start-up**	Notify DEQ in writing as new wastewater reuse systems become operational.

E. Compliance Schedule for Required Activities

CA-00154-05 **Prior to Decontamination**	Submit a plan for DEQ review and approval for decontaminating tanker trucks or trailers that have transported and/or used reuse wastewater. The trucks/trailers shall not transport potable water intended for use as domestic water until decontamination as approved by DEQ has occurred.

F. Permit Limits and Conditions

1) The Permittee is allowed to apply wastewater and treat it on land application sites as prescribed in the tables below and in accordance with all other applicable permit conditions and schedules.

Category	Permitted Limits and Conditions
Type of Wastewater	Domestic Wastewater (approximately 1% of flow from non-domestic sources)
Application Sites/ Wastewater Reuse Systems	1. High Rate Application to RI Basins 11 Basins, 2.6 acres per basin 2. Wastewater Treatment Plant (WWTP) Grounds Irrigation 1.34 acres, turf grass; wastewater also delivered to the belt filter press and to hose bib faucets 3. Golf Course Irrigation 100.8 acres, turf grass 4. Compost Piles Moisture Control Approximately 50 ft x 100 ft (0.115 acres), paved and curbed pad 5. Soil Farm Moisture Control Approximately 0.9 acres; three bioremediation zones, 0.3 acres per active zone 6. Municipal Solid Waste Landfill Dust Suppression Approximately 4 acres: unpaved access roads, tipping area of the active landfill cell, and within the below-grade active landfill cell 7. Construction Debris Landfill Dust Suppression Approximately 3 acres: unpaved access roads and each construction contractor tipping area
Application Season	1. High Rate Application to RI Basins: **Year-round** 2. WWTP Grounds Irrigation, Golf Course Irrigation, Compost Piles Moisture Control, Soil Farm Moisture Control, Municipal Solid Waste Landfill Dust Suppression, Construction Debris Landfill Dust Suppression: **Growing Season only**
Growing Season (GS)	April 1 through October 31

F. Permit Limits and Conditions

Category	Permitted Limits and Conditions
Maximum Hydraulic Loading Rate **(includes wastewater and supplemental irrigation water, if used)**	1. High Rate Application to RI Basins: 310 MGA 2. WWTP Grounds Irrigation and Golf Course Irrigation (this limit applies to the golf course if the golf course is used for effluent application, if only fresh irrigation water is used, this limit does not apply to the golf course): Growing Season (GS) Hydraulic Loading Rate shall be no greater than the Irrigation Water Requirement (IWR) using data from the tables of the following University of Idaho web site: http://www.kimberly.uidaho.edu/water/appndxet/index.shtml. IWR is equal to the Mean IR data from these tables divided by the irrigation system efficiency. In lieu of these tables, current climatic and evaporation data, or 30-year average data may be used to calculate the IWR, as defined in the DEQ 1994 Technical Interpretive Supplement, pages IV-6 and IV-7. Assume no carryover soil moisture and a leaching rate of zero in calculating the IWR. Application shall generally follow consumptive use rates throughout the season. 3. Compost Piles Moisture Control: Hydraulic Loading Rate shall be no greater than that required to maintain sufficient moisture in the compost piles, offsetting the net evaporation from the piles during the growing season. Approximate hydraulic loading rate of 94,000 gallons annually. 4. Soil Farm Moisture Control: Hydraulic Loading Rate to follow 366 CES Instruction 32-7001 water addition instructions: introduce water onto contaminated soil at a rate of 60 to 80 percent of maximum field capacity for each month during the growing season for three bioremediation zones. Approximate total hydraulic loading rate of 103,000 gallons annually. 5. Municipal Solid Waste Landfill Dust Suppression, Construction Debris Landfill Dust Suppression: Hydraulic Loading Rate shall be no greater than that required for dust suppression; wastewater shall be applied only when surface soils are very dry and creating a nuisance due to blowing dust, determined by visual inspection. Approximate hydraulic loading rate of 7.3 million gallons annually.
No Runoff	No runoff is allowed from any site or fields used for wastewater land application except after a 25-year, 24-hour storm event or

F. Permit Limits and Conditions

Category	Permitted Limits and Conditions
	greater using Western Regional Climate Center (WRCC) Precipitation Frequency Map, Figure 28 "Isopluvials of 25-YR, 24-HR Precipitation". For this site, the 25-year, 24-hour event is 1.6 inches.
Wastewater Quantity	Wastewater Treatment Plant Design Basis: 310 MGA
Ground Water	Ground Water Quality shall be in compliance with the *Idaho Ground Water Quality Rule* IDAPA 58.01.11
Nitrogen Application Limits	1. High Rate Application to RI Basins The total nitrogen (Total as N: TKN + Nitrate + Nitrite) concentration of the RI Basin influent shall not exceed 20 mg/L, based on a 30-day average. 2. Wastewater Treatment Plant (WWTP) Grounds Irrigation 85 pounds/acre-year or other agronomic-based rate pre-approved by DEQ (from all sources) 3. Golf Course Irrigation 85 pounds/acre-year or other agronomic-based rate pre-approved by DEQ (from all sources)
Total Suspended Solids (TSS) Application Limit	The TSS content of the RI Basin influent shall not exceed 100 mg/L, based on a 30-day average.
Grazing	Grazing is allowed only in conformance with a DEQ approved grazing management plan.
Construction Plans	Prior to construction of all wastewater facilities, detailed plans and specifications shall be reviewed and approved by DEQ. Within 30 days of completion of construction, the permittee shall submit as-built plans for review and approval or a letter from an Idaho-registered Professional Engineer certifying that the wastewater facilities were constructed in substantial accordance with the approved plans and specifications.
Odor Management	The wastewater treatment plant, land application facilities, and other operations associated with the facility shall not create a public health hazard or nuisance conditions including odors.
Signing	1. Wastewater Treatment Plant (WWTP) Grounds Irrigation • Install signs identifying the areas irrigated with effluent:

Category	Permitted Limits and Conditions
	"Attention: Reclaimed Water, Avoid Contact, Do Not Drink" or equivalent. • Install signs at effluent reuse hose bib faucets and at the belt filter press indicating that water is not safe for drinking or bodily contact such as "Attention: Reclaimed Water, Avoid Contact, Do Not Drink" or equivalent. 2. Golf Course Irrigation • Install signs around the perimeter of the golf course and at other locations identifying the areas irrigated with reuse wastewater such as "Attention: Reclaimed Water, Avoid Contact, Do Not Drink", or equivalent. Minimum sign placement of every 500 feet along the perimeter of the course and at the entrance to the no. 1 and 10 tee box areas. • Warning signs are required around golf course ponds used for effluent storage. Signs should read "Attention: Contains Reclaimed Water, Do Not Enter" or equivalent. 3. Compost Piles Moisture Control, Soil Farm Moisture Control Install signs identifying the reuse wastewater application area such as "Attention: Reclaimed Water, Avoid Contact, Do Not Drink", or equivalent. 4. Municipal Solid Waste Landfill Dust Suppression, Construction Debris Landfill Dust Suppression Install signs identifying the reuse wastewater application areas such as "Attention: Reclaimed Water, Avoid Contact, Do Not Drink", or equivalent. Minimum sign placement: at the entrance to each landfill, at each tipping area, at the active municipal landfill cell, and every 500 feet along access roads. 5. Reuse Wastewater Tanker Truck or Trailer Trucks or trailers transporting or using WWTP effluent shall have the words "NONPOTABLE WATER" written in 6-inch or higher letters on each side and the rear of the truck

Buffer Zone Distances for Land Application/ Wastewater Reuse/ Wastewater Storage Areas	Disinfection Level, Total Coliform (Note 1)	Distance to Public Access	Distance to Inhabited Dwellings	Distance to Streams (Note 2)	Distance to Private Water Sources	Distance to Public Water Sources, including Base Production Wells (Note 2)	Single Sample Maximum Total Coliform level
	2.2/100 ml	0 feet	100 feet	100 feet	500 feet	1,000 feet	23/100 ml
	23/100 ml	50 feet	300 feet	100 feet	500 feet	1,000 feet	240/100ml
	230/100 ml	300 feet	1,000 feet	100 feet	500 feet	1,000 feet	2400/100ml

Notes:

1. Disinfection to 23/100 ml or greater is required for all application sites/wastewater reuse systems, excluding High Rate Application to RI Basins. As reuse system designs evolve from conceptual to final, the appropriate level of disinfection treatment will be verified as part of the plan and specification review process, applying the current DEQ WLAP rules and guidance. Compliance determination method for disinfection requirements is as follows:
   - For determining compliance with the 2.2/100 ml disinfection level, the median value of the last five (5) results must not exceed 2.2/100 ml. In addition, no single sample value shall exceed 23/100 ml.
   - For determining compliance with the 23/100 ml disinfection level, the median value of the last five (5) results must not exceed 23/100 ml. In addition, no single sample value shall exceed 240/100 ml.
   - For determining compliance with the 230/100 ml disinfection level, the median value of the last five (5) results must not exceed 230/100 ml. In addition, no single sample value shall exceed 2400/100 ml.
2. The minimum buffer zone between effluent application areas and man-made canals and ditches is 50 feet.
3. A minimum 100-foot buffer zone will be maintained between golf course areas irrigated with reuse wastewater and BPW-8. When wastewater reuse is implemented at the golf course, BPW-8 will be used only for backup golf course irrigation. Isolation of BPW-8 from the Base domestic water distribution system and wellhead protection measures will be required; construction plans and specifications shall be submitted to DEQ for review and approval prior to modification or construction.

Additional Buffer Zone Requirements	<u>Golf Course Irrigation</u> • Irrigation shall be accomplished during nighttime hours only, when golf course is not in use. • Reuse wastewater shall not be sprayed within 100 feet of areas where food is prepared or served or where drinking fountains are located. <u>WWTP Grounds Irrigation, Compost Piles Moisture Control</u>, <u>Soil Farm Moisture Control, Municipal Solid Waste Landfill Dust Suppression</u>, <u>Construction Debris Landfill Dust Suppression</u> • Personnel either shall be within closed vehicles or maintain a minimum distance of 50 feet from application sites during periods of wastewater application. • A minimum 300-foot buffer distance shall be maintained between the Compost Piles Moisture Control wastewater application area and the Base vegetable gardening area.
Additional Wellhead Protection Requirements	A minimum 50-foot buffer distance shall be maintained between land application areas and on-site monitoring wells. Any irrigation wells that are connected to a land application system shall have approved backflow prevention devices. These devices shall be tested for proper operation on an annual basis.

G. Monitoring Requirements

1) Appropriate analytical methods, as given in the *Handbook for Land Application of Municipal and Industrial Wastewater, April 1996*, or as approved by the Idaho Department of Environmental Quality (hereinafter referred to as DEQ), shall be employed. A description of approved sample collection methods, appropriate analytical methods and companion QA/QC protocol shall be included in the Operation and Maintenance Manual.
2) The permittee shall monitor and measure parameters and submit information as stated in the Facility Monitoring Table in this section.
3) Samples shall be collected at times and locations that represent typical environmental and process parameters being monitored.
4) Monitoring locations are described in Appendix 1. Environmental Monitoring Serial Numbers.
5) Monitoring is required at the frequency shown in the table below if wastewater is applied anytime during the time period shown. Unless otherwise agreed in writing by the DEQ, data collected and submitted shall include, but not be limited to, the parameters and frequencies in the Facility Monitoring Table as follows.
6) If the soil management unit is less than 15 acres, use 5 sub-samples. If the soil management unit is greater than 15 acres, use 10 sub-samples.
7) Three (3) soil samples shall be collected at each sample location, one at 0-12 inches, one at 12-24 inches, and one at 24-36 inches. The soil samples collected at 0-12 inches from each sample location shall be composited. Similarly, all soil samples collected at 12-24 inches shall be composited and all soil samples collected at 24-36 inches shall be composited. This method will yield three samples for analysis, one for 0-12 inches, one for 12-24 inches and one for 24-36 inches for each soil management unit.
8) Ground Water Monitoring Procedure: Ground Water Monitoring Wells shall be purged a minimum of three casing volumes and/or until field measurements for pH, specific conductance and temperature meet the following conditions: two successive temperature values measured at least five minutes apart are within one degree Celsius of each other, pH values for two successive measurements measured at least five minutes apart are within 0.2 units of each other, and two successive specific conductance values measured at least five minutes apart are within 10% of each other. This procedure will determine when the wells are suitable for sampling for constituents required by the permit. Other procedures, such as low flow sampling, may be considered by DEQ for approval. The static water level shall be measured prior to pumping or sampling for ground water.

Facility Monitoring Schedule

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Daily	Flowmeter	Influent to SBRs	Gallons/day, gallons/month
Daily (for reuse systems in service)	Flowmeter, Record	Reuse Wastewater to each Hydraulic Management Unit	Gallons/day, gallons/month
Daily (when Golf Course reuse system in service)	Flowmeter	Golf Course Supplemental Irrigation Water	Gallons/day, gallons/month

G. Monitoring Requirements

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
3 times per week (when Golf Course reuse system in service)	Reuse Wastewater applied to Golf Course	Grab Sample	Chlorine Residual, Total Coliform
Weekly (for reuse systems in service)	Reuse Wastewater to: 1. Belt Filter Press/ Hose Bib Faucets/ WWTP Grounds Irrigation 2. Compost Piles Moisture Control 3. Soil Farm Moisture Control 4. Municipal Solid Waste Landfill and Construction Debris Landfill Dust Suppression	Grab Sample	Chlorine Residual, Total Coliform
Monthly	Chlorine Contact Basin Effluent (characterizes reuse wastewater to WWTP Grounds Irrigation, compost pile, soil farm, and landfills)	WWTP Effluent Quality, Composite Sample (minimum of 4 equal aliquots over an 8-hr period)	BOD_5, Chemical Oxygen Demand (see note below), Total Suspended Solids, Total Kjeldahl Nitrogen, Nitrite + Nitrate-Nitrogen, Total Phosphorous. Note: Analyze for Chemical Oxygen Demand first year of permit only
Monthly	Reuse Wastewater to RI Basins	RI Basin Influent Quality, Composite Sample (minimum of 4 equal aliquots over an 8-hr period)	Total Suspended Solids, Total Kjeldahl Nitrogen, Nitrite + Nitrate-Nitrogen, Total Phosphorous
Monthly (when Golf Course reuse system in service)	Reuse Wastewater applied to Golf Course	Golf Course Reuse Wastewater Quality, Composite Sample (minimum of 4 equal aliquots over an 8-hr period)	Total Suspended Solids, Total Kjeldahl Nitrogen, Nitrite + Nitrate-Nitrogen, Total Phosphorous

G. Monitoring Requirements

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Quarterly	Reuse wastewater to: 1. WWTP Grounds (Chlorine Contact Basin Effluent) 2. RI Basins 3. Golf Course (if used for reuse application)	Reuse Wastewater Quality, Composite Sample (minimum of 4 equal aliquots over an 8-hr period)	Total Dissolved Solids
Quarterly	Influent to SBRs	WWTP Influent Quality, Composite Sample (minimum of 4 equal aliquots over an 8-hr period)	BOD_5, Total Suspended Solids, Total Kjeldahl Nitrogen, Nitrite + Nitrate-Nitrogen, Total Phosphorous
Twice per Year in April and October	BPW-5, BPW-8, BPW-9, MW-3-2, MW-6-2, MW-7-2, MW-17-2, MW-21, MW-22, MW-23 Begin Monitoring when Golf Course Reuse System is placed in Service: BPW-6, MW-11-2, MW-18	See Monitoring Requirement E.6	Chloride, Nitrate-Nitrogen, Total Phosphorus, Total Dissolved Solids, pH, Static Water Level, Total Iron, Total Manganese, Dissolved Iron [1], Dissolved Manganese [1] 1. Analytical results for dissolved iron and/or manganese only required if the results for total iron and/or manganese exceed the standards in IDAPA 58.01.11.200.01.b.
Twice per Year in April and October (if golf course is used for reuse application)	Golf Course Supplemental Irrigation Water	Grab Sample	Chloride, Nitrate-Nitrogen, Total Phosphorus, Total Dissolved Solids
Annually (November)	Each Soil Monitoring Unit	See Monitoring Requirement E.5	Electrical Conductivity, Nitrate-Nitrogen, Ammonium Nitrogen, Phosphorus (plant available), pH
Annually	Each Hydraulic Management Unit	Acres used for land application/ wastewater reuse	Acres

G. Monitoring Requirements

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Annually	WWTP Grounds and Golf Course[1] Hydraulic Management Units	Total nitrogen and phosphorus load from fertilizer and all other non-wastewater application	Nitrogen and phosphorus applied in pounds/acre-year
Annually	WWTP Grounds and Golf Course[1] Hydraulic Management Units	Total nitrogen and phosphorus loading calculation from reuse wastewater	Nitrogen and phosphorus applied in pounds/acre-year
Annually	WWTP Grounds and Golf Course[1] Hydraulic Management Units	Irrigation Water Requirement	Volume (inches per acre and total gallons) for each month for Growing Season
Annually	RI Basin, WWTP Grounds, and Golf Course[1] Hydraulic Management Units	TDS Loading Calculation	TDS applied in pounds/acre-year
Prior to startup for new wastewater ponds and lagoons and Every five years for all wastewater ponds and lagoons	All wastewater treatment and storage ponds and lagoons (excluding RI Basins) at the treatment facility and land application sites	Seepage Rate Testing	Conduct seepage test in accordance with the DEQ uniform seepage test procedures (DEQ program guidance No. MFC-8) or another method pre-approved by DEQ
Annually	All flow measurement locations	Flow measurement calibration	Document the flow measurement calibration of all flow meters and pumps used directly or indirectly measure all wastewater and supplemental irrigation water flows applied to each HMU

G. Monitoring Requirements

Frequency	Monitoring Point	Description and Type of Monitoring	Parameters
Annually	Supplemental irrigation water connections with wastewater distribution systems	Backflow testing	Document the testing of all backflow prevention devices for all supplemental irrigation pumps directly connected to the wastewater distribution system(s). Report the testing date(s) and results of the test (pass or fail). If any test failed, report the date of repair or replacement of backflow prevention device, and if the repaired/replaced device is operating correctly

1. This monitoring requirement for the golf course hydraulic management unit is required if the golf course reuse system is in service. If only fresh irrigation water is used on the golf course, this monitoring is not required.

H. Standard Reporting Requirements

1. The permittee shall submit an Annual Wastewater-Land Application Site Performance Report ("Annual Report") prepared by a competent environmental professional no later than January 31 of each year which shall cover the previous year from January 1 through December 31. The Annual Report shall include results for monitoring required in Section G, status of compliance activities, and an interpretive discussion of monitoring data (ground water, vadose zone, hydraulic loading, wastewater etc.) with particular respect to environmental impacts by the facility.

2. The annual report shall contain the results of the required monitoring as described in Section G. Monitoring Requirements. If the permittee monitors any parameter more frequently than required by this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual report.

3. The annual report shall be submitted to the Engineering Manager in the applicable Regional DEQ Office.

Boise Regional Office
1445 N. Orchard
Boise, ID 83706-2239
208-373-0550

Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
208-769-1422

Idaho Falls Regional Office
900 N. Skyline, Suite B
Idaho Falls, ID 83402
208-528-2650

Lewiston Regional Office
1118 "F" Street
Lewiston, ID 83501
208-799-4370

Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201
208-236-6160

Twin Falls Regional Office
601 Pole Line Road, Suite 2
Twin Falls, ID 83301
208-736-2190

A copy of the annual report shall also be mailed to:

Richard Huddleston, P.E.
Wastewater Program Manager
1410 N. Hilton
Boise, ID 83706
208-373-0561

4. Notice of completion of any work described in Section E. *Compliance Schedule for Required Activities* shall be submitted to the Department within 30 days of activity completion. The status of all other work described in Section E shall be submitted with the Annual Report.

5. All laboratory reports containing the sample results for monitoring required by Section G. *Monitoring Requirements* of this permit shall be submitted with the Annual Report.

I. Standard Permit Conditions: Procedures and Reporting

1. The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, operational controls and monitoring, which are installed or used by the permittee to comply with all conditions of the permit or the Wastewater-Land Application Permit Regulations, in conformance with a DEQ approved, current Plan of Operations (Operations and Maintenance Manual) which describes in detail the operation, maintenance, and management of the wastewater treatment system. This Plan of Operations shall be updated as necessary to reflect current operations.

2. Wastewater(s) or recharge waters applied to the land surface must be restricted to the premises of the application site unless permission has been obtained from the DEQ authorizing a discharge into the waters of the State as stated in IDAPA 58.01.02.600.02.

3. Wastewater must not create a public health hazard or nuisance condition as stated in IDAPA 58.01.02.600.03. In order to prevent public health hazards and nuisance conditions the permittee shall:
   a. Apply wastewater as evenly as practicable to the treatment area;
   b. Prevent organic solids (contained in the wastewater) from accumulating on the ground surface to the point where the solids putrefy or support vectors or insects; and
   c. Prevent wastewater from ponding in the fields to the point where the ponded wastewater putrefies or supports vectors or insects.

4. The permittee shall:
   a. Manage the wastewater land application treatment site as an agronomic operation where vegetative cover is grown and harvested or grazed to utilize the nutrients and minerals in the wastewater, and,
   b. Not hydraulically overload any particular areas of the wastewater land application treatment site.

5. All waste solids, including dredgings and sludges, shall be utilized or disposed in a manner which will prevent their entry, or the entry of contaminated drainage or leachate therefrom, into the waters of the state such that health hazards and nuisance conditions are not created; and to prevent impacts on designated beneficial uses of the ground water and surface water. The permittee's management of waste solids shall be governed by the terms of the DEQ approved Waste Solids Management Plan, which upon approval shall be an enforceable portion of this permit.

6. If the permittee intends to continue operation of the permitted facility after the expiration of an existing permit, the permittee shall apply for a new permit at least six months prior to the expiration date of the existing permit in accordance with the Waste Water Land Application Permit Regulations and include seepage tests on all lagoons per latest DEQ procedures.

7. The permittee shall allow the Director of the Idaho Department of Environmental Quality or the Director's designee (hereinafter referred to as Director), consistent with Title 39, Chapter 1, Idaho Code, to:
   a. Enter the permitted facility,
   b. Inspect any records that must be kept under the conditions of the permit.
   c. Inspect any facility, equipment, practice, or operation permitted or required by the permit.
   d. Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility.

8. The permittee shall report to the Director under the circumstances and in the manner specified in this section:

   a. In writing thirty (30) days before any planned physical alteration or addition to the permitted facility or activity if that alteration or addition would result in any significant change in information that was submitted during the permit application process.
   b. In writing thirty (30) days before any anticipated change which would result in non-compliance with any permit condition or these regulations.
   c. Orally within twenty-four (24) hours from the time the permittee became aware of any non-compliance which may endanger the public health or the environment at telephone numbers provided in the permit by the Director (see below)

      DEQ Regional Office: see Permit Certification Page
      Emergency 24 Hour Number 1-800-632-8000

d. In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any non-compliance unless extended by the DEQ. This report shall contain:
   i. a description of the non-compliance and its cause;
   ii. the period of non-compliance including to the extent possible, times and dates and, if the non-compliance has not been corrected, the anticipated time it is expected to continue; and
   iii. steps taken or planned to reduce or eliminate reoccurrence of the non-compliance.

e. In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Director. Those facts or the correct information shall be included as a part of this report.

9. The permittee shall take all necessary actions to prevent or eliminate any adverse impact on the public health or the environment resulting from permit noncompliance.

10. The permittee shall determine (on an on-going basis) if any noxious weed problems relate to the permitted sites. If problems are present, coordinate with the Idaho Department of Agriculture or the local County authority regarding their requirements for noxious weed control. Also address these control operations in an update to the Operations and Maintenance Manual.

J. Standard Permit Conditions: Modifications, Violations, and Revocation

1. The permittee shall furnish to the Director within reasonable time, any information including copies of records, which may be requested by the Director to determine whether cause exists for modifying, revoking, re-issuing, or terminating the permit, or to determine compliance with the permit or these regulations.

2. Both minor and major modifications may be made to this permit as stated in IDAPA 58.01.17.700.01 and 02 with respect to any conditions stated in this permit upon review and approval of the DEQ.

3. Whenever a facility expansion, production increase or process modification is anticipated which will result in a change in the character of pollutants to be discharged or which will result in a new or increased discharge that will exceed the conditions of this permit, or if it is determined by the DEQ that the terms or conditions of the permit must be modified in order to adequately protect the public health or environment, a request for either major or minor modifications must be submitted together with the reports as described in section H. *Standard Reporting Requirements*, and plans and specifications for the proposed changes. No such facility expansion, production increase or process modification shall be made until plans have been reviewed and approved by the DEQ and a new permit or permit modification has been issued.

4. Permits shall be transferable to a new owner or operator provided that the permittee notifies the Director by requesting a minor modification of the permit before the date of transfer.

5. Any person violating any provision of the Waste Water Land Application Permit Regulations, or any permit or order issued thereunder shall be liable for a civil penalty not to exceed ten thousand dollars ($10,000) or one thousand dollars ($1,000) for each day of a continuing violation, whichever is greater. In addition, pursuant to Title 39, Chapter 1, Idaho Code, any willful or negligent violation may constitute a misdemeanor.

6. The Director may revoke a permit if the permittee violates any permit condition or the Wastewater Land Application Permit Regulations.

7. Except in cases of emergency, the Director shall issue a written notice of intent to revoke to the permittee prior to final revocation. Revocation shall become final within thirty-five (35) days of receipt of the notice by the permittee, unless within that time the permittee request an administrative hearing in writing to the Board of the Department of Environmental Quality pursuant to the Rules of Administrative Procedures contained in IDAPA 58.01.23.

8. If, pursuant to Title 67, Chapter 52, Idaho Code, the Director finds the public health, safety or welfare requires emergency action, the Director shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, a revocation hearing before the Board of the Department of Environmental Quality shall be provided. Such hearings shall be conducted in accordance with the Rules of Administrative Procedures contained in IDAPA 58.01.23.

9. The provisions of this permit are severable and if a provision or its application is declared invalid or unenforceable for any reason, that declaration will not affect the validity or enforceability of the remaining provisions.

10. The permittee shall notify the DEQ at least six (6) months prior to permanently removing any permitted land application facility from service, including any treatment, storage, or other facilities or equipment associated with the land application site. Prior to commencing closure activities, the permittee shall: a) participate in a pre-site closure meeting with the DEQ; b) develop a site closure plan that identifies specific closure, site characterization, or cleanup tasks with scheduled task completion dates in accordance with agreements made at the pre-site closure meeting; and c) submit the completed site closure plan to the DEQ for review and approval within forty-five (45) days of the pre-site closure meeting. The permittee must complete the DEQ approved site closure plan.

Appendix 1
Environmental Monitoring Serial Numbers

HYDRAULIC MANAGEMENT UNITS		
Description	**Acres**	**Serial No.**
Basin 1	2.6	MU-015401
Basin 2	2.6	MU-015402
Basin 3	2.6	MU-015403
Basin 4	2.6	MU-015404
Basin 5	2.6	MU-015405
Basin 6	2.6	MU-015406
Basin 7	2.6	MU-015407
Basin 8	2.6	MU-015408
Basin 9	2.6	MU-015409
Basin 10	2.6	MU-015410
Basin 11	2.6	MU-015411
WWTP Grounds	1.34	MU-015412
Composting Piles Moisture Control	0.11	MU-015413
Soil Farm Moisture Control	0.9	MU-015414
Municipal Solid Waste Landfill Dust Suppression	4	MU-015415
Construction Debris Landfill Dust Suppression	3	MU-015416
Golf Course	100.8	Hydraulic Management Units to be assigned when Golf Course wastewater reuse design is finalized.

WASTEWATER SAMPLING POINTS	
Description	**Serial No.**
Influent to SBR Reactors	WW-015401
Reuse Wastewater to RI Basins	WW-015402
Chlorine Contact Basin Effluent/Reuse Wastewater to WWTP Grounds, Belt Filter Press and Hose Bib Faucets, Compost Files for Moisture Control, Soil Farm for Moisture Control, and Landfills for Dust Suppression	WW-015403
Reuse Wastewater Applied to Golf Course	WW-015404

Appendix 1
Environmental Monitoring Serial Numbers

LAGOONS		
Description	**Location**	**Serial No.**
Lagoon 1	Wastewater Storage Lagoon	LG-015401
Lagoon 2	Golf Course Storage Impoundment (if used for wastewater effluent storage)	LG-015402

SOIL MONITORING UNITS		
Description	**Associated Hydraulic Unit**	**Serial No.**
Golf Course Soil Monitoring Units to be assigned when Golf Course wastewater reuse design is finalized.		

GROUNDWATER MONITORING		
Description	**Location**	**Serial No.**
BPW-5	See Appendix 2	GW-015401
BPW-8	See Appendix 2	GW-015402
BPW-9	See Appendix 2	GW-015403
MW-3-2	See Appendix 2	GW-015404
MW-6-2	See Appendix 2	GW-015405
MW-7-2	See Appendix 2	GW-015406
MW-17-2	See Appendix 2	GW-015407
MW-21	See Appendix 2	GW-015408
MW-22	See Appendix 2	GW-015409
MW-23	See Appendix 2	GW-015410
BPW-6	See Appendix 2	GW-015411
MW-11-2	See Appendix 2	GW-015412
MW-18	See Appendix 2	GW-015413

Appendix 2
Site Map(s)

Figure 2, Land Application Sites, Mt Home Air Force Base, Parsons Engineering Science, Inc.
Figure 3, Land Application Site, Wastewater Treatment Plant Grounds
Figure 8, Land Application Site, Golf Course
Figure 13, Land Application Site, Soil Farm
Wastewater Treatment Plant Site Plan
Figure 2-4, Well Locations, Groundwater Monitoring Plan

Note: Figure 2 and Figure 2-4 contain confidential information regarding the MHAFB drinking water system and are not available in the public record.